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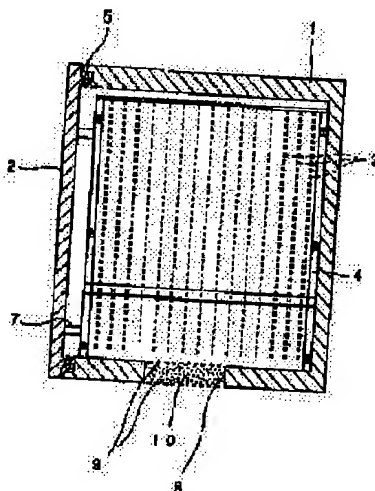
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(54) STORAGE TRANSPORTATION CONTAINER FOR PREVENTING POLLUTION

(57)Abstract:

PROBLEM TO BE SOLVED: To maintain the interior state of a container by forming the all surface parts of a container interior part with any one of metal, glass, ceramic, and quartz or a combination of these substances except an organic material absorbing material part, and defining an air permeable penetration part via an organic matter absorption material.

SOLUTION: A container main body 1 and an open and close part door 2 for taking in and out a sample is made of aluminum. A metal holding member 4 of a wafer 3 is manufactured of stainless steel. Between the open and close door 2 and the main body 1, a high purity aluminum gasket is used as a packing 5. In addition, a penetration part 8 for the inside and outside parts of the case is provided; then, powder activated charcoal is charged in this penetration part 8 as an organic material absorption material 10. By this construction, all surface parts being exposed to air are metal except the organic matter absorbing material 10, and also, it includes the penetration part 8 via the organic matter absorbing material 10, an organic matter pollution caused by the container per se can be prevented during storage or transportation of an sample.



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TITLE: Storage conveyance container structure for pollution control - has penetration portion filled with organic substances adsorption material provided in container which enables passing of external air to container

PATENT-ASSIGNEE: SUMIKA BUNSEKI CENTER KK[SUMIN]

PRIORITY-DATA: 1998JP-0204202 (June 15, 1998)

PATENT-FAMILY:

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INT-CL (IPC): B65D085/86; H01L021/68

ABSTRACTED-PUB-NO: JP2000007084A

BASIC-ABSTRACT: NOVELTY - The surface portion inside the container consists of a combination of a metal, glass, ceramic and quartz. A penetration portion (8) through which air passes to the inside from outside of the container is provided in the container and an organic substance adsorption material (10) such as activated charcoal, graphite carbon, carbon molecular sieve, etc is provided in the penetration portion.

USE - For preventing contamination of raw materials used for electronic components used in electronic industry, drugs used in drug industrial field, in chemical industrial field or in research and development etc.

ADVANTAGE - Prevents pollution of raw materials stored inside with organic substances. A change of the contamination condition for analyzing the organic substance contamination and an ion component contamination is prevented to the minimum extent.

DESCRIPTION OF DRAWING(S) - The figure shows a sectional view of the storage conveyance container. (8) Penetration portion; (10) Organic substance adsorption material.

CHOSEN-DRAWING: Dwg.2/3

TITLE-TERMS:

STORAGE CONVEY CONTAINER STRUCTURE POLLUTION CONTROL PENETRATE PORTION FILLED ORGANIC SUBSTANCE ADSORB MATERIAL CONTAINER ENABLE PASS EXTERNAL AIR CONTAINER

DERWENT-CLASS: J04 Q34 U11

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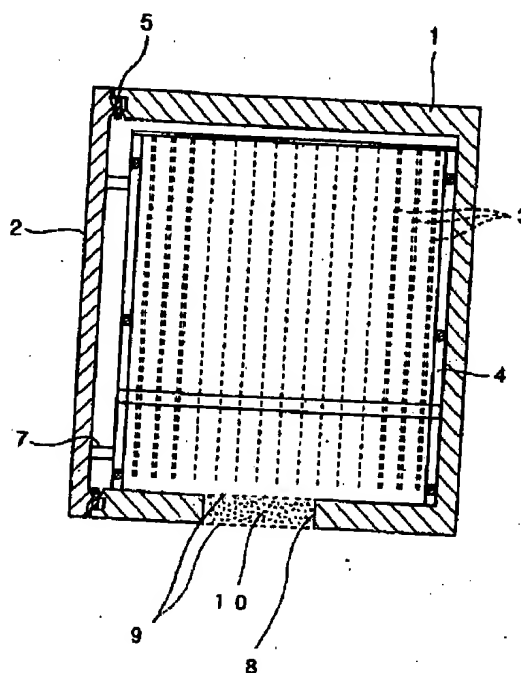
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(54) 【発明の名称】 汚染防止用保管運搬容器

(57) 【要約】

【課題】 評価・分析を目的とした試料としての電子工業分野、医薬工業分野、及び化学工業分野、又はこれらの研究開発における製品、原材料、及び製造装置若しくはそれらの部品の保管及び運搬に使用する保管容器で、その保管や運搬する際にその間の汚染状態の変化を最小限に防止して、イオン類汚染の正確な評価・分析を可能にし、又は運搬又は保管する内容物の環境空気からの汚染を最小限としてその性能の劣化を防止する。

【解決手段】 上記の課題・目的を解決するため、本発明の汚染防止用保管運搬容器は、環境中の空気等からの汚染を防止する必要がある材料若しくは部品の保管及び運搬に使用する試料等の保管又は運搬容器において、該容器内部の表面部分が有機物吸着材料部分を除いて金属、ガラス、セラミックス、石英のいずれか又はそれらの組み合わせからなる形態とし、その構成部品間に柔軟い金属材料を押圧封止材として用いた形態として、かつ該容器内部と外部とを有機物吸着用材料を介して空気が通過できる貫通部分を装備した構成を有する。



【特許請求の範囲】

【請求項1】 環境中の空気等からの汚染を防止する必要がある材料若しくは部品の保管及び運搬に使用する試料等の保管又は運搬容器において、該容器内部の表面部分が金属、ガラス、セラミックス、石英のいずれか又はそれらの組み合わせからなる形態とし、その構成部品間に柔らかい金属材料を押圧封止材として用いた形態として、かつ該容器内部と外部とを有機物吸着用材料を介して空気が通過できる貫通部分を装備した汚染防止用保管運搬容器。

【請求項2】 請求項1の汚染防止用保管運搬容器を構成する有機物吸着用材料が活性炭、グラファイトカーボン、カーボンモレキュラーシープ、モレキュラーシープ、若しくは有機物吸着用ポリマー、又はこれらの混合物であることを特徴とする請求項1に記載の汚染防止用保管運搬容器。

【請求項3】 請求項1又は2の汚染防止用保管運搬容器がウエハ等の電子産業部品又は電子産業部材、クリーンルームの建設部材、又はクリーンルーム内にて使用する帳票、備品類を運搬又は保管するための請求項1又は2に記載の汚染防止用保管運搬容器。

【請求項4】 請求項1、2又は3の汚染防止用保管運搬容器が電子産業部材のウエハを運搬又は保管するための請求項1、2又は3に記載の汚染防止用保管運搬容器。

【請求項5】 請求項1、2、3又は4の汚染防止用保管運搬容器が、その運搬内容物又は保管物の表面又は表面部近郊内部の、有機物又はメタルイオン以外のイオン類の測定分析を実施するために環境中の空気等又は容器からの汚染を防止又は最小化することが必要な物を運搬又は保管するための請求項1、2、3又は4に記載の汚染防止用保管運搬容器。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、電子工業用原材料及び電子工業用製造装置材料若しくは部品などの環境中の空気等からの汚染を防止する必要がある材料若しくは部品の保管又は運搬に使用する汚染防止用保管運搬容器に関する。

【0002】

【従来の技術】電子工業分野、医薬工業分野、及び化学工業分野又はこれらの研究開発においてはその発達とともに、製品、原材料及び製造装置若しくはそれらの部品は、汚染を可能な限り低減した清浄なものが必要とされている。特に電子工業分野では半導体等の集積度が増加するに従い、有機物汚染・無機イオン汚染が半導体、液晶表示デバイスまたはハードディスク等の製造に重大な障害を与えることが明らかになってきており、そのために上記材料や部品の汚染量のレベルを正確に評価・測定することが重要になってきている。この有機物汚染の評

価・分析方法としては、ガスクロマトグラフィ、ガスクロマトグラフ質量分析法、X線光電子分光法、飛行時間型二次イオン質量分析法又はイオンモービリティ・スペクトロスコーピー等の機器分析法が知られている。また、無機イオン汚染の評価・分析方法としては、イオンクロマトグラフィ、液体クロマトグラフィ、キャピラリー電気泳動等の機器分析法が知られている。また、評価・分析に供される試料としての原材料及び製造装置材料、又はそれらの部品の保管や運搬にはその間の有機物やイオン類からの汚染を最小限に抑える保管又は運搬容器が必要とされる。

【0003】

【発明が解決しようとする課題】しかし、従来から使用されている保管や運搬用の容器は少なくとも部分的に樹脂等のポリマーや有機材料が使用されており、有機物やイオン類の評価・分析ではその容器自体が試料に対する汚染源となるため、これら容器を試料の保管や運搬に用いることは、有機物汚染やイオン類汚染の正確な評価・分析において重大な問題となっていた。すなわち、たとえば有機物又はイオン類の評価・分析を目的とした試料としての電子工業用原材料及び電子工業用製造装置材料若しくは部品の保管又は運搬に使用する容器において、その保管運搬時に容器自体から発生する有機汚染物質により汚染状態が変化するため、その試料の有機物汚染を正確に評価・分析することができないという問題があった。

【0004】そのため本発明は、上記の材料若しくは部品の汚染物質を評価・分析するに際し、汚染物質測定に供するまでの間にその保管又は運搬時になされる容器及び外気等による汚染物質の汚染状態の変化という重大な問題を解決し、よって、上記材料若しくは部品の汚染物質の変化を最小にして、正確に評価・分析し得る簡便な汚染防止用保管運搬容器を提供することを目的とするものである。すなわち、本発明が解決しようとする課題は、環境空気中等からの有機物やイオン類の汚染を防止し、かつ汚染物を除去、減失させることもなく、容器内の保管又は運搬するものの状態を極力維持して保管又は運搬する課題である。

【0005】

【課題を解決するための手段】上記の課題・目的を解決するため、本発明の汚染防止用保管運搬容器は、環境中の空気等からの汚染を防止する必要がある材料若しくは部品の保管及び運搬に使用する汚染防止用保管運搬容器において、該容器内部の表面部分が有機物吸着用材料部分を除いてすべて金属、ガラス、セラミックス、石英のいずれか又はそれらの組み合わせからなる形態とし、その構成部品間に柔らかい金属材料を押圧封止材として用いた形態として、かつ該容器内部と外部とを有機物吸着用材料を介して空気が通過できる貫通部分を装備したものである。

【0006】すなわち、本発明の最大の特徴は該容器内部の表面部分が有機物吸着材料部分を除いて金属、ガラス、セラミックス、石英のいずれか又はそれらの組み合わせからなる形態とし、特に外気の侵入による外気中有機物やメタルイオンを除くイオン類による試料の汚染を防止するために、容器内部と外部とを有機物吸着用材料を介して空気が通過できる貫通部分を装備した点にある。

【0007】本発明は容器の内面の空気にさらされる表面部分が金属、ガラス、セラミックス、石英のいずれか又はそれらの組み合わせである汚染防止用保管運搬容器を用いることによって、試料の保管運搬時に容器自体からの有機物汚染が防止でき、一方、本発明は容器内部と外部とを有機物吸着材料を介して空気が通過できる貫通部分を装備することによって試料の出し入れに必要な開閉部が存在するために完全な密閉が不十分になる場合で保管時の外気圧の変動によって開閉部のわずかな間隙から外気の一部が汚染防止用保管運搬容器に漏れこんで外気中の有機物によって試料が汚染されるを防止することができる。

【0008】本発明において、表面部分とは好ましくは80%、望ましくは95%以上を意味し、この範囲内においては発明の効果がある物と考える。

【0009】本発明における汚染防止用保管運搬容器の金属材料としては、特に制限は設けられないが、アルミニウム、銅、鉛、ニッケル若しくは白金、又はそれらの合金を挙げることができる。特に本発明の優れた効果を十分に享受し得るものとしてはアルミニウム又はアルミニウム合金が好ましい。しかしながら、容器全体が金属、ガラス、セラミックス、石英のいずれか又はそれらの組み合わせからなる形態であることは必ずしも必要ではなく、容器内部の空気にさらされる表面が金属、ガラス、セラミックス、石英のいずれか又はそれらの組み合わせからなる形態であればよく、そのため容器の内面に金属、ガラス、セラミックス、石英のいずれかの板若しくは金属箔による内貼り、又は金属、ガラス、セラミックス、石英のいずれかのコーティングが施されたものであっても良い。

【0010】本発明において、構成部品間の柔らかい金属製押圧封止材として、好ましくはブリネル硬さ20以下の金属を使用する。

【0011】本発明の有機物吸着用材料としては、活性炭、グラファイトカーボン、カーボンモレキュラーシブ、モレキュラーシブ、若しくは有機物吸着用ポリマー、又はこれらの混合物を使用する。有機物吸着用ポリマーとしては特に制限は設けられないが、ポリスチレン・ジビニルベンゼン共重合体ポリマービーズ、エチルビニルベンゼン・ジビニルベンゼン共重合体ポリマービーズ、ビニルピロリドンポリマービーズ、ビニルピリジン重合体ポリマービーズ、ジビニルベンゼン・エチルビニ

ルベンゼン・エチレングリコールジメタクリレート共重合体ポリマービーズ、架橋ポリスチレン重合体ポリマービーズ、ポリアロマチックポリマービーズ、又は架橋アクリル酸エステルポリマービーズを挙げることができる。

【0012】有機物吸着用材料の形状は特に制限は設けられないが、粉末状、粒状、繊維状、ポーラス材料への担持、又は蜂の巣状の成形体を挙げることができる。有機物吸着用材料を汚染防止用保管運搬容器の貫通部分に装着固定する方法は特に制限は設けられないが、例えば金属製の2枚のメッシュ板によるサンドイッチ構造にして有機物吸着用材料を固定することができ、又は金属製の円筒状カラムに有機物吸着用材料を充填してその両端をガラス繊維等で固定する方法が挙げられる。

【0013】本発明の汚染防止用保管運搬容器の内部に試料保持具を装備しても良い。この試料保持具は試料を内部に収容しかつ個々に保持する金属製保護具か、又は各試料間に挿入され試料と組み合わせられて容器内部に保持固定される金属製スペーサーであり、その材料としては、上記と同様に特に制限はないが、アルミニウム、ニッケル若しくは白金又はその合金を挙げることができる。

【0014】本発明におけるイオン成分としては、フッ素イオン、塩化物イオン、亜硝酸イオン、硝酸イオン、りん酸イオン、硫酸イオン、及びアンモニウムイオンをあげることが出来る。

【0015】本発明の汚染防止用保管運搬容器の構成部品間に装備される柔らかい金属製の押圧封止材としては特に制限はないが、アルミニウム、高純度アルミニウム、白金、鉛、スズ、又はこれらの合金を挙げることができる。

【0016】本発明は、有機物吸着用材料部分を除いて、容器の内面の空気にさらされる表面部分に金属を用いることであり、外気の侵入による外気中有機物の試料への汚染を防止のために、容器内部と外部とを有機物吸着用材料を介して空気が通過できる貫通部分を装備した点にある。

【0017】本発明の対象とする電子工業用原材料及び電子工業用製造装置材料若しくは部品は、本発明の優れた効果を十分に享有し得るものとして、特にシリコンウエハを適用されるのが好ましい。

【0018】次に、実施例により本発明を説明するが、実施例によって本発明方法が制限されるものではない。

【0019】

【実施例1】図1に本発明による実施例1の汚染防止用保管運搬容器の斜視図を示す。図2は図1のA-A線による断面図である。この実施例1においては、本体部分1は箱形のアルミニウム製ケースで試料出し入れ用の開閉部扉2もアルミニウム製である。内部に縦置きで設置されるウエハ3の金属製保持具4はステンレス鋼で製造

されており、ウエハ相互の接触を防止するためウエハ1枚ごとに対応した溝がある。開閉式の扉2と本体1の間を密閉化するためパッキン5は高純度アルミニウムのガasketが使用される。扉2と本体1は図1で示される尾錠6により締付け固定されている。8は箱内部と外部との貫通部であり、貫通部8には2枚のステンレス製金属メッシュ板9によって固定された有機物吸着用材料としての粉末活性炭10が充填されている。

【0020】以下にこの汚染防止用保管運搬容器を使用した実験例を示す。

【0021】予め400℃で1時間保持して有機物を除去して清浄にしたシリコンウエハの表面を、加熱脱離ーガスクロマトグラフィー質量分析法により、表面付着有機物の測定を行った。その結果、有機物表面濃度は0.004 ng/cm³であった。

【0022】次に、活性炭を取り外した汚染防止用保管運搬容器及び保持具をアセトンで洗浄し、次いで80℃で2時間加熱乾燥し、容器内面に汚染している有機物を除去クリーニングした。その後で活性炭を充填して、この清浄化した汚染防止用保管運搬容器に、前述の有機物を除去したシリコンウエハを収納し、室温で7日間保持した後、容器に収納していたシリコンウエハの表面付着有機物の測定を行った。その結果、有機物表面濃度は0.006 ng/cm³であった。このことから、本発明を用いることにより試料保管運搬時の有機物汚染はほとんど無いことがわかった。

【0023】

【実施例2】実施例1と同様に、活性炭を取り外した容器及び保持具をアセトンで洗浄し、次いで80℃で2時間加熱乾燥し、容器内面に汚染している有機物を除去クリーニングした。その後で活性炭を充填して、この清浄化した汚染防止用保管運搬容器に、前述の実施例1と同様に処理して有機物を除去したシリコンウエハを収納し、東京ー大分間往復空輸した後、容器に収納していたシリコンウエハの表面付着有機物の測定を行った。その結果、有機物表面濃度は0.006 ng/cm³であった。このことから、本発明を用いることにより試料保管運搬時の有機物汚染はほとんど無いことがわかった。

【0024】

【実施例3】有機物吸着用材料として、活性炭の代わり40 にポリスチレン・ジビニルベンゼン共重合体ポリマービーズを用いた以外は実施例1と同様に試験した結果、有機物表面濃度は0.007 ng/cm³であった。この

ことから、本発明を用いることにより試料保管運搬時の有機物汚染はほとんど無いことがわかった。

【0025】

【比較例】予め400℃で1時間保持して有機物を除去して清浄にしたシリコンウエハをポリプロピレン製のウエハキャリアケースに収納し、室温で1週間保持した後、加熱脱離ーガスクロマトグラフィー質量分析法により、表面付着有機物の測定を行った。その結果、有機物表面濃度は3.2 ng/cm³であった。この結果から、従来のポリプロピレン製のウエハキャリアケースに収納保存した場合には、シリコンウエハ表面への有機物汚染が起こり、正確なシリコンウエハ表面有機物分析が不可能であった。

【0026】

【発明の効果】以上説明したとおり、本発明では、有機物の評価・分析に供される試料である電子工業用原材料及び電子工業用製造装置材料若しくは部品の保管及び運搬に、有機物吸着用材料部分を除いてその内部の空気にさらされる表面部分が全て金属であり、また該容器内部と外部とを有機物吸着用材料を介して空気が通過できる貫通部分を装備した構成を有する汚染防止用保管運搬容器を使用することによって、試料の保管又は運搬の間の容器自体及び外気による有機物汚染という重大な問題を解消して、有機物汚染やイオン成分汚染を評価・分析するための汚染状態の変化を最小限に防止することができる。

【図面の簡単な説明】

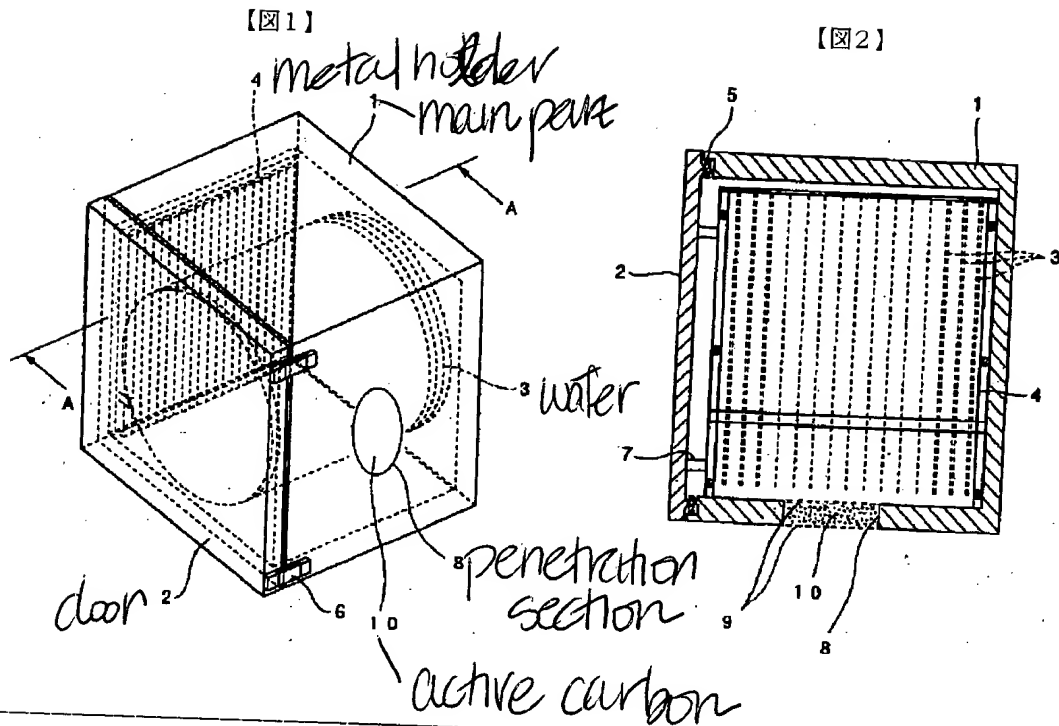
【図1】本発明による実施例1の汚染防止用保管運搬容器の斜視図。

【図2】図1の実施例1のA-A線による断面図。

【図3】図2の押圧封止材の拡大図

【符号の説明】

- 1 本体
- 2 扉
- 3 ウエハ
- 4 金属製保持具
- 5 パッキン
- 6 尾錠
- 7 押えピン
- 8 貫通部分
- 9 金属製メッシュ
- 10 有機物吸着用材料



【手続補正書】

【提出日】平成10年9月4日(1998.9.4)

【手続補正1】

【補正対象書類名】明細書

【補正対象項目名】図3

【補正方法】削除

フロントページの続き

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to the storage conveyance container for pollution controls used for storage or conveyance of the material or the parts which need to prevent the contamination from the air in the environment of the raw material for electronic industry and the manufacturing installation material for electronic industry, or parts etc.

[0002]

[Description of the Prior Art] In an electronic industry field, a physic industrial field and chemical-industry fields, or these research and development, the pure thing to which a product, raw material and manufacturing installations, or those parts reduced contamination as much as possible is needed with the development. It is becoming clear that organic substance contamination and inorganic ion contamination do a serious obstacle for manufacture of a semiconductor, a liquid crystal display device, or a hard disk, and it is becoming important to evaluate and measure correctly level of the amount of contamination of the above-mentioned material or parts for the reason as degrees of integration, such as a semiconductor, especially increase in an electronic industry field. As the assay method of this organic substance contamination, instrumental-analysis methods, such as a gas chromatography, a gas chromatograph mass spectrometer, X-ray photoelectron spectroscopy, a time-of-flight type secondary ion mass spectrometry, or ion mho kinky thread tee spectroscopy, are learned. Moreover, as the assay method of inorganic ion contamination, instrumental-analysis methods, such as an ion chromatography, liquid chromatography, and capillary-tube electrophoresis, are learned. Moreover, the storage which suppresses the contamination from the organic substance and ion in the meantime to the minimum, or a conveyance container is needed for storage of the raw material as a sample with which an assay is presented and manufacturing installation material, or those parts, or conveyance.

[0003]

[Problem(s) to be Solved by the Invention] However, it had become a serious problem in exact evaluation and analysis of organic substance contamination or ion contamination that the container the storage currently used from the former and for conveyance uses these containers for storage and conveyance of a sample since polymer and organic materials, such as a resin, are used partially at least and the container itself serves as a pollution source to a sample in the assay of the organic substance or ion. That is, in the container used, for example for storage or conveyance of the raw material for electronic industry as a sample aiming at the assay of the organic substance or ion and the manufacturing installation material for electronic industry, or parts, since a pollution state changed with the organic pollutants generated from the container itself at the time of the storage conveyance, there was a problem that organic substance contamination of the sample could not be evaluated and analyzed correctly.

[0004] Therefore, this invention faces carrying out the assay of the above-mentioned material or the pollutant of parts, and the serious problem of change of the pollution state of the pollutant by a container, the open air, etc. which will be made at the time of the storage or conveyance by the time it presents pollutant measurement solves, and change of the above-mentioned material or the pollutant of parts makes into the minimum, and it aims at providing the simple storage conveyance container for pollution controls which can be evaluated and analyzed correctly. That is, without preventing contamination of the organic substance from the environmental air middle class, or ion, and removing a contamination and making it impaired, the technical problem which this invention tends to solve is the storage in a container, or a technical problem which maintains a state as much as possible, and keeps or carries it, although carried.

[0005]

[Means for Solving the Problem] In order to solve the above-mentioned technical problem and purpose, the storage conveyance container for pollution controls of this invention In the storage conveyance container for pollution controls used for storage and conveyance of the material or the parts which need to prevent the contamination from the air in environment etc. The surface portion inside this container removes an organic substance adsorption material portion. altogether A metal, glass, It considers as the gestalt which consists of either or those combination of ceramics and a quartz, and the penetration portion into which air can pass through this interior of a container and the exterior through the charge of organic substance adsorption material as a gestalt using the soft metallic material as a press sealing agent between the component part is equipped.

[0006] that is, the greatest feature of this invention be in the point of having equipped the penetration portion into which air can pass through the interior of a container, and the exterior through the charge of organic substance adsorption material, in order it consider as the gestalt which the surface portion inside this container become from either or those combination of a metal, glass, ceramics, and a quartz except for an organic substance adsorption material portion and prevent contamination of the sample by

the ion except the organic substance in the open air and the metal ion especially by invasion of [0007] this invention by using the storage conveyance container for pollution controls whose surface portion exposed to the air of the inside of a container is either or those combination of a metal, glass, ceramics, and a quartz. The organic substance contamination from the container itself can be prevented at the time of storage conveyance of a sample. On the other hand, since the opening-and-closing section required for receipts and payments of a sample exists by equipping the penetration portion into which air can pass through the interior of a container, and the exterior through organic substance adsorption material, this invention A part of open air is leaked and crowded with the case where perfect sealing becomes inadequate, in the storage conveyance container for pollution controls from few gaps of the opening-and-closing section by change of atmospheric pressure the outside at the time of storage, with the organic substance in the open air, a sample is polluted and ** can be prevented. [0008] In this invention, a surface portion is desirable, 80%, 95% or more is meant desirably and the object which has an effect of the invention within the limits of this is considered.

[0009] As a metallic material of the storage conveyance container for pollution controls in this invention, although especially a limit is not prepared, it can mention aluminum, copper, lead, nickel, platinum, or those alloys. As what can fully enjoy the effect which was excellent in especially this invention, aluminum or an aluminium alloy is desirable. However, it is not necessarily required to be the gestalt which the whole container becomes from either or those combination of a metal, glass, ceramics, and a quartz. That what is necessary is just the gestalt which the front face exposed to the air inside a container becomes from either or those combination of a metal, glass, ceramics, and a quartz. Therefore, while being based on one of the boards or metallic foils of a metal, glass, ceramics, and a quartz, it sticks on the inside of a container, or coating of a metal, glass, ceramics, or a quartz may be given.

[0010] In this invention, a with a pulley flannel hardness of 20 or less metal is preferably used as a soft metal press sealing agent between component parts.

[0011] As a charge of organic substance adsorption material of this invention, activated carbon, graphite carbon, a carbon molecular sieve, a molecular sieve, the polymer for organic substance adsorption, or such mixture are used. Although especially a limit is not prepared as polymer for organic substance adsorption, a polystyrene divinylbenzene copolymer polymer bead, an ethyl vinylbenzene divinylbenzene copolymer polymer bead, a vinyl-pyrrolidone polymer bead, a vinylpyridine polymer polymer bead, a divinylbenzene ethyl vinylbenzene ethylene glycol dimethacrylate copolymer polymer bead, a bridge formation polystyrene polymer polymer bead, a polyallomer tic polymer bead, or a bridge formation acrylic-ester polymer bead can be mentioned.

[0012] Although especially a limit is not prepared, as for the configuration of the charge of organic substance adsorption material, it can mention the Plastic solid of the shape of the support to powder, a grain, fibrous, and porous material, or a nest of a bee. The method of the method of carrying out wearing fixation of the charge of organic substance adsorption material at the penetration portion of the storage conveyance container for pollution controls being able to make it a sandwich structure with two metal mesh boards, for example, although especially a limit is not prepared, it being able to fix the charge of organic substance adsorption material, or filling up a metal cylinder-like column with the charge of organic substance adsorption material, and fixing the ends from a glass fiber etc. is mentioned.

[0013] You may equip the interior of the storage conveyance container for pollution controls of this invention with a sample holder. the metal protector which this sample holder holds a sample in the interior, and is held separately -- or although it is the metal spacer by which is inserted between each sample, is combined with a sample, and maintenance fixation is carried out inside a container and there is especially no limit like the above as the material, aluminum, nickel, platinum, or its alloy can be mentioned.

[0014] As an ion component in this invention, fluorine ion, a chloride ion, a nitrite ion, a nitrate ion, phosphoric acid ion, a sulfate ion, and an ammonium ion can be raised.

[0015] Although there is especially no limit as a soft metal press sealing agent equipped between the component parts of the storage conveyance container for pollution controls of this invention, aluminum, high grade aluminum, platinum, lead, tin, or these alloys can be mentioned.

[0016] this invention is using a metal for the surface portion exposed to the air of the inside of a container except for the charge portion of organic substance adsorption material, and is in the point of having equipped the penetration portion into which air can pass through the interior of a container, and the exterior through the charge of organic substance adsorption material because of prevention of the contamination to the sample of the organic substance in the open air by the invasion of the open air.

[0017] As for the raw material for electronic industry and the manufacturing installation material for electronic industry, or the parts which are made into the object of this invention, it is desirable that especially a silicon wafer is applied as what may fully possess itself of the effect which was excellent in this invention.

[0018] Next, although an example explains this invention, this invention method is not restricted by the example.

[0019]

[Example 1] The perspective diagram of the storage conveyance container for pollution controls of the example 1 by this invention is shown in drawing 1. Drawing 2 is a cross section by the A-A line of drawing 1. In this example 1, opening-and-closing **** 2 for [in a part for this soma 1] sample receipts and payments with the case made from aluminum of an enclosed type is also a product made from aluminum. The metal holder 4 of the wafer 3 installed in the interior in every length is manufactured by stainless steel, and in order to prevent contact between wafers, there is a slot which corresponded for every one wafer. In order to sealing-ize between the door 2 of an opening-and-closing formula, and main parts 1, as for packing 5, the gasket of high grade aluminum is used. A door 2 and a main part 1 are bound tight by **** 6 shown by drawing 1, and are being fixed. 8 is the penetration section of the interior of a box, and the exterior, and the penetration section 8 is filled up with the

powder activated carbon 10 as a charge of organic substance adsorption material fixed with two metal mesh boards 9 made from stainless steel.

[0020] The example of an experiment which used this storage conveyance container for pollution controls for below is shown.

[0021] The surface adhesion organic substance was measured for the front face of the silicon wafer which held at 400 degrees C beforehand for 1 hour, removed the organic substance, and was made pure by the heating desorption-gas chromatograph mass spectrometer. Consequently, organic substance surface concentration was 0.004 ng/cm³.

[0022] Next, the acetone washed the storage conveyance container for pollution controls and holder which removed activated carbon, subsequently stoving was carried out at 80 degrees C for 2 hours, and removal cleaning of the organic substance currently polluted to the container inside was carried out. After having filled up activated carbon with after that, containing the silicon wafer which removed the above-mentioned organic substance in this storage conveyance container for pollution controls that defecated and holding for seven days at a room temperature, the surface adhesion organic substance of the silicon wafer contained in the container was measured. Consequently, organic substance surface concentration was 0.006 ng/cm³. From this, by using this invention showed that most organic substance contamination at the time of sample storage conveyance could not be found.

[0023]

[Example 2] The acetone washed the container and holder which removed activated carbon like the example 1, subsequently stoving was carried out at 80 degrees C for 2 hours, and removal cleaning of the organic substance currently polluted to the container inside was carried out. Activated carbon is filled up with after that, the silicon wafer which processed like the above-mentioned example 1 in this storage conveyance container for pollution controls that defecated, and removed the organic substance in it is contained, and it is Tokyo. - After carrying out between round trip air transport very much, the surface adhesion organic substance of the silicon wafer contained in the container was measured. Consequently, organic substance surface concentration was 0.006 ng/cm³. From this, by using this invention showed that most organic substance contamination at the time of sample storage conveyance could not be found.

[0024]

[Example 3] As a result of examining like an example 1 as a charge of organic substance adsorption material except having used the polystyrene divinylbenzene copolymer polymer bead instead of activated carbon, organic substance surface concentration was 0.007 ng/cm³. From this, by using this invention showed that most organic substance contamination at the time of sample storage conveyance could not be found.

[0025]

[Comparative Example(s)] After having held at 400 degrees C beforehand for 1 hour, containing the silicon wafer which removed the organic substance and was made pure in the wafer carrier case made from polypropylene and holding for one week at a room temperature, the surface adhesion organic substance was measured by the heating desorption-gas chromatograph mass spectrometer. Consequently, organic substance surface concentration was 3.2 ng/cm³. When receipt preservation was carried out from this result at the wafer carrier case made from conventional polypropylene, the organic substance contamination to a silicon wafer front face took place, and exact silicon wafer surface organic substance analysis was impossible.

[0026]

[Effect of the Invention] In this invention, to storage and conveyance of the raw material for electronic industry which is a sample with which the assay of the organic substance is presented and the manufacturing installation material for electronic industry, or parts as explained above All the surface portions exposed to the air of the interior except for the charge portion of organic substance adsorption material are metals. Moreover, by using the storage conveyance container for pollution controls which has the composition which equipped the penetration portion into which air can pass through this interior of a container, and the exterior through the charge of organic substance adsorption material The serious problem of the organic substance contamination by the container itself and the open air between storage of a sample or conveyance can be solved, and change of the pollution state for carrying out the assay of organic substance contamination or the ion component contamination can be prevented to the minimum.

[Translation done.]

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CLAIMS

[Claim(s)]

[Claim 1] In the storage or the conveyance container of a sample etc. used for storage and conveyance of the material or the parts which need to prevent the contamination from the air in environment etc. Consider as the gestalt which the surface portion inside this container becomes from either or those combination of a metal, glass, ceramics, and a quartz, and as a gestalt using the soft metallic material as a press sealing agent between the component part And the storage conveyance container for pollution controls which equipped the penetration portion into which air can pass through this interior of a container, and the exterior through the charge of organic substance adsorption material.

[Claim 2] The storage conveyance container for pollution controls according to claim 1 characterized by the charges of organic substance adsorption material which constitute the storage conveyance container for pollution controls of a claim 1 being activated carbon, graphite carbon, a carbon molecular sieve, a molecular sieve, the polymer for organic substance adsorption, or such mixture.

[Claim 3] The storage conveyance container for pollution controls according to claim 1 or 2 for carrying or keeping the document and supplies which a claim 1 or the storage conveyance container for pollution controls of 2 uses in electronic industrial parts, such as a wafer, or an electronic industrial member, the Construction Department material of a clean room, or a clean room.

[Claim 4] claims 1 and 2 or the storage conveyance container for pollution controls of 3 -- electronic industry -- the storage conveyance container for pollution controls according to claim 1, 2, or 3 for carrying or keeping the wafer of a member

[Claim 5] The storage conveyance container for pollution controls according to claim 1, 2, 3, or 4 for carrying or keeping an object with required claims 1, 2, and 3 or the storage conveyance container for pollution controls of 4 preventing or minimizing the contamination from containers in environment, such as air, in order to carry out measurement analysis of ion other than the organic substance or the metal ion inside the front face of the conveyance contents or an article in custody, or the surface section suburbs.

[Translation done.]